

# LISTing

## Newsletter

Newsletter of the  
Long Island Sinclair/Times  
Users Group  
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Incorporating NYTSE  
December 1987

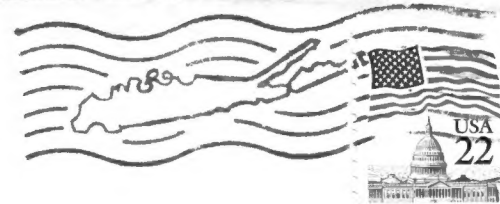
Yes, I know it's late. But I'll mention the next meeting dates anyway:  
LIST: Jan. 10 at Harvey's, and Feb. 21 at Harvey's; note that this is the  
THIRD Sunday in Feb.

NYTSE: Meets Mon. Jan. 11 at Miss Kims, Park Ave. S., and Feb. 22 at  
Miss Kims. Call Joe Newman or Harvey R. for more info.

UPCOMING LISTings: AI articles? Z88 info, 2068 pokes+peeks, making  
Code Relocatable, Alternate Modem Power Supplies, Graphics for Zebra's  
Designer Series, and more! But keep on submitting articles to Joe Newman  
(info. inside). Also -Zx-T/S Hardware Clock Project!

HAPPY NEW YEAR AND ALL THAT JAZZ! ♪♪ ♪\*♫♪☆

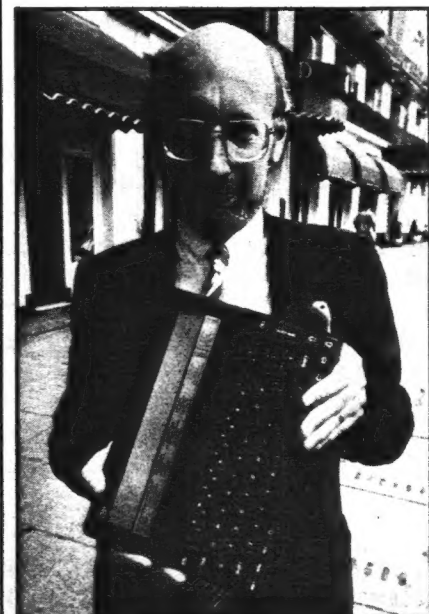
L.I.S.T.  
5 Peri Lane  
Valley Stream, NY 11581



TO: Don Jan-89  
3310 Clover Dr S Lambert  
Cedar Rapids IA  
52404

FIRST CLASS MAIL  
DATE MEETING NOTICE  
Please DON'T delay!

story inside! ->



Sir Clive Sinclair is hoping his teeny 2-pound PC will be a gigantic success.

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LISTing Listing

Please send all submissions to:

Joe Newman, 325 W. Jersey St.,

#2D, Elizabeth, NJ 07202

PLEASE DON'T SEND 'UPCOMING ARTICLE'

ANNOUNCEMENTS-just send the article!

or send items for the LIST group

(i.e.- not for publication) to:

LIST, Harvey Rait

5 Peri Lane

Valley Stream, NY 11581

PLEASE NOTE THE NEW LIST ADDRESS

yearly LIST dues- \$15

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#### Newsletter Newsnotes

First- of most importance: we wish a speedy recovery to our beloved president (of LIST), Myles Cohen, from his unfortunate accident. Myles, when they say 'Break a leg' before you go on stage, they don't mean it literally! At the time of this writing, Myles is luxuriating at the VA Hospital on 24th and 1st Avenues in Manhattan, Ward 10N, Bed 18- so you know where to send the get-well cards.

As mentioned in the last issue, G & C Computer Products in California are offering TMX-64, a 64 column BBS program for the 2068, along with many other features. The program release date has been put off till 'around X-Mass'. It's X-Mass now, and still no TMX-64, so don't worry if you ordered it and haven't gotten it yet. G & C is also offering Quad Density disk drives for \$45 ea, or 2 for \$80 (\$5 s+h/driver). Call or write them for more info, and mention LISTing.

The 2068-Update seems to be going well and has very interesting plans for the future. Bill Jones, the Update creator, is committed. Contact him at: TS-2068 Update, 1317 Stratford Ave., Panama City, FL 32404. \$12/year.

The Timex disk drive newsletter (TOPS) seems to be publishing again. It was taken over by Ronald Havlen, 4307 Chambers Road, Horsehead, NY 14845. Contact him for more info.

An interesting note was passed along

by Stoney M.- RAMTOP newsletter reports a rumor of a 2068 interface that will allow it to use an AT as a slave, including all its peripherals!

The Florida Winterfest is all systems go. Don't be turned off by fear of costs. I have checked around and found rooms at the Comfort Inn and others within walking distance of the Marriot, for only \$45 per night. I don't plan to spend much time in a hotel room if I go to the Fest, so even if the Comfort Inn ain't a Hilton, who cares? And airfare from the NY area can still be had for under \$200 roundtrip. Its possible some of the travel agents among our groups will be able to help further (I am in discussion with two now- one has been able to get roundtrip airfare from the WEST coast to FL for about \$150! We'll see what he can do for us!).

The 'Guy from Timex', who is now president of Psion America, will probably make the February meeting. He wasn't able to make it in Dec. or Jan. due to the biggie computer shows he'll be attending.

Speaking of guys, unfortunately we have lost a good one from our group. Nazir Pashtoon has moved to Illinois (Des Plaines I think?) due to a change in employment. His Sinclair expertise will be missed by the group- hopefully an IL group will gain this valuable asset.

As you know, the last meeting was the buy/sell/swap-meet. Very little new information was presented, therefore no meeting minutes.

QL 512K RAM, only \$130!

Matt Zenkar is offering a new U.S. made 512K ram pack for the QL. It features low power consumption, zero wait states, surge-suppresses QL power supply, fully through-ported, and it fits all the way inside the QL expansion port. Perhaps the most interesting feature besides the price is that the MZ512K also has a FIVE YEAR warranty. Why not buy American-

this time it seems better! Contact Matt Zenkar, POB 12534, Rochester, NY 14612. \$5 shipping, and NY state residents must add sales tax. Matt can accept Visa and MC.

256K for the 2068?!? YES!!

Larken Electronics has announced that a 256K ramdisk has been completed for the 2068. Larry Kenny has told me that he has a working prototype and production circuit boards are being produced. The ramdisk should be available for sale shortly, at a reasonable price. Please keep in mind that this is a RAMdisk, which requires a Larken DOS cartridge (from the disk system) for use. It will function like a storage device, not main RAM for your 2068.

A NEW COMPUTER FOR \$27.50???

Well, no, but a radically transformed one-- the Spec-emulated TS 2068 seems utterly new and fascinating again with Beta Basic from Betasoft of Birmingham, England. Forget the disadvantageous exchange rate; Bob Hartung is accepting checks for \$27.50 + \$1.50 service charge to put it on his charge card and the program is received in less than three weeks. Or you can put the 15 pounds on your Visa or Mastercard. Or you can send a check for \$35. But is Beta Basic worth it?

It is the best program I have ever seen for folks who enjoy programming more than any game devised for computers. So you have mastered Sinclair Basic and you are feeling a bit ho-hum about it, but machine code is awsome difficult for any quick mastery and you don't want to buy a QL to get procedures. They're here!

Procedures, and so much more: like formatted listings for easy reading--a choice of 5 kinds. How about selecting size of print: one pixel to one screen size with a single keyword and the numbers of pixels for height and width. Graphic capabilities away and beyond Sinclair Basic and you can save your SCREEN\$ to tape in Spectrum

mode and load them back in in 2068 mode, or save to your disk drive for dispersal for your regular TS contributions to tape libraries. But for hours of personal experimentation--well, remember when you first got your 2068? The zest is back because Dr. Wright, the author, undoubtedly spent hours with the same frustrations we all have. How about when you are writing a long, long statement and realize that the editing is going to be murder? Beta Basic permits splitting that overly long statement into two from right in the middle of the doozy. The arrow keys permit going all four directions within the statement line. There's a clock that can be set to alarm or a half dozen other ways, autonumber with again a half dozen variations like copying a whole block of statements to another area with the original block still left in its position. You can define every key on the keyboard as a string or even whole series of statements. Remember POKEing to the least significant byte then the most significant byte wiith \*256, etc.? Again 1 keyword: DPOKE for double poke. DPEEK to check it out too! To say that Wright has added 100 new keywords and functions doesn't begin to cover the marvel of this program because every one has a half dozen uses and choices. But are you immobilized until you master the intricacies of Beta Basic? Absolutely not because all of the original commands, etc. of Sinclair Basic are there too, unchanged. You can add windows, do-loops, else, get, while, exit if, and the rest of the 100 kinks gradually.

Or send \$5 to Bob Hartung for his tutorial. Mine is release 3.0 for emulated Spec-twin to out TS2068 but 4.0 for the Spectrum 128K is ready also. My current fantasy revolves around the exhaustion of QLs modified for US consumption. Maybe those dealers will take up the Spectrum 128 +3 [ha ha ha hee hee hooo oh- ED]. Everything I have seen in QL programs seems to be available through Beta Basic.

- Stoney McMurray

Reportedly, Zebra can modify the Z drives system to work with emulated Spectrum. What about the other disk drive systems? If the Oliger, Larken, and Aerco can work with emus or rom-switched 2068, there's no reason why Beta Basic should be a rarified sidetrack [I know for sure Spectrum roms can work with the Larken; don't know about the others- ED]. After all, for most of us computing is a communal affair.

Contacts: Beta Soft, 92 Oxford Road, Moseley, Birmingham, B13 9SQ, England.  
Robert Hartung, 22416 No. County Line Road, Huntertown, IN 46748.

-Joan Kealy

Those Old BEIGE Doorstops?!?  
Remember the canard that the ZX-81 was useful only as a doorstop? It was the result of Commodore's [or is that Commode-Door- ed.] \$100 rebate offer for a trade-in of any PC. At the time, people would buy a new ZX-81 for \$50; so, many first-time buyers mailed brand-new ZX-81's into Commodore for a fast \$50 profit. Reportedly, they got thousands of them. And being Commodore, they couldn't figure out annything better to do with them than pass them on to their employees "to use as doorstops". (Probably, Commodore's employees couldn't figure them out either!)

Well, the November 23, 1987, issue of COMPUTERWORLD (a newsweekly), in a front page article reports "The largest corporations are buying more and more...80286 and 80386 based... and are wrestling with what to do with their...8088 based systems."

"While many companies relegate their older machines to...mundane tasks..., some use them as oversize doorstops, and others haave tried giving them away".

The price has changed, though- COMPUTERWORLD reports the price of used PC's with 2 drives and mono monitor at \$750, XT with 10Mb drive, \$1325. [Some doorstops!]

#### FINALLY- SINCLAIR REPAIR SERVICE!

Dan Elliot, Rt. 1, Cabool, MO 65689 has offered repair services for the following computers: TS-2068, TS-1000/1500, ZX-81, 16, 32, & 64K ram packs, and the Sinclair QL. His charges are as follows:

TS- 2068- \$15 plus parts

Sinclair QL- \$25 plus parts

All the other items mentioned above are \$5 each plus parts. Outside continental USA add \$5 for shipping.

Any equipment which has been modified other than the original manufacturers design- add \$5 to above. Other services such as upgrading and modifications are also available. To send in equipment:

Describe in detail the pproblem and whether or not the problem is intermittent. List any software/hardware associated with the problem, and any modifications to the equipment. PLEASE DO NOT SEND IN THE POWER PACK WITH YOUR COMPUTER. For more information write to Dan at the above or call (314) 739-1712 evenings Sunday through Thursday.

#### INTERESTING INFO

Martin H. has posed some interesting info for the group. One is a survey, which is a good idea. The people who are able to show up at LIST meetings know each others interests- but what about the majority of the group? What are your interests (pertaining to Sinclair and computers)? Which of the Sinclair computer(s) do you currently use most? For what? What would you like to see for any of you Sinclair machines, in terms of hardware and/or software? Please pass along your comments to the editor; then perhaps Martin can be prevailed upon to tabulate the information...which can help to keep this group interesting!

Also, who is interested in Sinclair/ Timex computer Fests? How many people plan to or would like to attend the Florida fest or another fest? What about a local fest on the east coast? Share your feelings...please. Many



feel an east coast (NY area) fest would not be worthwhile...what do you think and why...would you be willing to help organize a NY area fest (the ALL IMPORTANT question!)???

And finally, Martin (and the rest of the group) wish to pass along holiday greetings- as Martin says- live long and prosper, happy holidays [sorry, I know it's late, but Martin got it to me early enough].

#### FOR SALE

ZX-81 computer, manual, power pack, 16K Ram, all connecting cables, cassettes of programs:

Grimm's Fairy Tales

The Gambler (Slots & blackjack)

Checkbook manager

Organizer (Filing D/B)

Mixed Games (Bowling, Bingo & Robot Wars), 50 games, ZX81 Pocket Book, Folder of over 25 useful programs, typewriter style keyboard with wiring instructions, hard plastic case, and 16 magazines: Syntax, ZX81, Sync. All Only \$45 firm.

John Austin

7 Sheffield Avenue

Lake Ronkonkoma, NY 11779

(516) 467-3198

QZX, The Journal Covering Amateur Radio and Sinclair Computers ZX80, Micro-Ace, ZX81, T/S1000-1500 and 2068. QZX- has just published a 60 page index book. QZX publishes articles, news, and programs on the use of all Sinclair computers for communications. Most of the subscribers, who come from all states and over 20 countries, are radio amateurs who use their Sinclair computers in their radio stations.

The index book is a bound xerox copy of all the covers of the monthly issues since December 1982. The covers list all the articles and programs which have appeared along with the authors and, in most cases, some indication of the specific computer for which the program was written. The index book can be obtained by sending \$6 to:

QZX

2025 O'Donnell

Las Cruces, NM 88001

TS-2068, 2 DSDD drives, Zenith Amber monitor, Panasonic printer, Aerco I.F., joystick, much software includes cartridges, 2 TS-1000's, many new keyboards, 3 modem boards with s.w. and technical manuals, every 'SYNC' ever published, all excellent, A.M. Keller, Crescent Drive R.D.1, Lake Hopatcong, NJ 07849. 201-663-0771 \$500.00

#### LETTERS

MR. KELLER-Your membership has been updated. The check should have been passed on to the proper party- you needn't be concerned about it.

Gentlemen:

What the hell is a modapter? I have an inquiring mind and I want to know, especially before I plunk down \$50! I can see buying terminal software but I can wire up an RS232 port. And why a 300 baud modem? The QL can be set for different baud rates, can it not? Can't a 1200, 2400 or 9600 baud modem be used?

And one final question? I hooked up [an Apple greenscreen monitor] to the QL and selected F1. The windows come up and I cannot see the cursor. I've adjusted the monitor for the smallest image it has...still cannot get the extreme left edge of the screen. I also get some flicker in the monitor mode. TV mode the cursor appears... no problems. What can I do?

Sincerely,

Loren Latker

Los Angeles, CA

\* Loren: The QL uses one chip to control both serial ports and several other things as well. At 300 baud this causes parity problems, therefore a 300 baud modem can't be plugged directly into the QL as it will produce garbage on the QL end. The modapter is a hardware device consisting of some chips and other parts which mostly correct the problem

at the slow baud rates. And you are right- 1200 and 2400 baud modems can be used with the QL...there is currently software that can handle 1200 baud, and soon to be 2400 baud. As for your monitor- I had an Apple monitor too, and got the same results with the QL. I doubt there is anything easy you can do about it. The flicker is due to the fact that the QL monitor mode operates at the 50 Hz rate, whereas the U.S. scan rate is 60 Hz. Many monitors can automatically adjust to keep up, but some, like the Apple, can't. If someone else can provide an alternative to Loren having to buy a new monitor, please let us know.

Dear Joe:

I need to react to your inquiry on page 5 of LISTing of October: "Would you be interested in editing a newsletter?"

What a splendidly silly idea! I have often wanted to volunteer for that job, but luckily I would realize that my health would not allow it. Sorry Joe.

I really had wanted to write an open letter to all the users of the QL, in answer to the open letter to the users of the TS2068/1000 which also appeared in the October issue. But I decided not to and will rather 'live and let live'. Many members of LIST know my opinions of Sir Clive and his computers; I have often aired them at the meetings [I'll have to ask about that!- Ed.]. If I had the money I'd buy a McIntosh or an IBM clone. That would be a sensible way of 'moving on up'. Not the Q(uality) L(acking) abomination. You have my permission to publish this.

- Cedric Bastiaans

#Cedric:

As to the October inquiry- 'twas a joke! Ha hah ho hoo oh oh oy vay. Even though I am a dealer of the QL I unfortunately cannot deny the fact that the QL manufacturer was seriously lacking in quality control. But I guess I have been lucky- out of

all the QL's that I have sold I have only had problems with machines sent to two customers. My personal machine has functioned perfectly since I've owned it (about two years, knock silicon). But just think at what a difference a disk drive or two and perhaps a better keyboard (and of course much better quality control) could have made in the QL introduction! Back in 1984 how many personal computers were able to multi-task...easily? And I'm sure not even you would agree that even at the present time the QDOS operating system/environment is far behind what MS-DOS and BASICA could ever be. The point is that for about a hundred bucks if you get a working machine you got a heck of a good buy in computing power...even if it is just to play with! But alas, the world belongs to bigger things...and to keep up with the world you may have to move on to those things, even if it means moving down from you humble Sinclair to an IBM.

LIST TAPES AVAILABLE TO MEMBERS ONLY  
LIST tapes are available for \$6 each. Send a 60 min. quality tape with a program on it and pay only \$3. OR attend meetings and pick up tapes for only \$1.50! A listing of the tapes will be published soon. Write to Harvey R. if interested in tapes, make checks payable to L.I.S.T. Up to 50 or 60 programs come on the LIST tapes!

## You're Telling Me the Z88 PC Is How Small?

Remember Sir Clive Sinclair, who in 1981 tried to bring computing to the masses with the \$99 Z81 computer?

Well, the eccentric Englishman is back with another pint-sized machine, this one called the Z88. Weighing in at under 2 pounds, Sir Clive's new \$400 offering is about as big as a notepad and includes built-in word processing, database and spreadsheet programs.

The computer is not a curiosity, but rather a tool for those in business who can never be away from their work, a representative for Mr. Sinclair said.

The teeny computer naturally has a teeny screen: an 8-line-by-106-character supertwist LCD.

Sir Clive is trying to reel in U.S. distributors for the Z88 and is hoping the machine will hit American shores by February, the rep said. ■

PC-Week, Nov. 10, 1987

QL COOLING PROBLEMS, PART #1 BY H.J.DIGIOVANNI, LIST.

I WAS THE LUCKY ? ONE WHO RECEIVED ONE OF THE FEW "QLS THAT "FREEZES" AFTER A FEW HOURS OF OPERATEION", TO QUOTE PARAGRAPH 5.1 OF THE SINCLAIR QL SERVICE MANUAL. IT FURTHER QUOTES "WE DO NOT YET FULLY UNDERSTAND WHY THIS HAPPENS WITH SOME COMPUTERS" THEIR "CURE" OF CLEANING THE ICS (PP 5.2) DOES NOTHING.

ONE OF THE FIRST USES OF MY QL WAS TO USE PROGRAM TAX\_I\_QL FOR MY 1968 INCOME TAX. THE ADDITION OF A "MIRACLE" 512 RAM PACK MADE MATTERS WORSE. IT WAS HEART BREAKING TO WORK OUT A FORM, ONLY TO HAVE THE COMPUTER FREEZE AND TO HAVE TO RESET AND START OVER.

IT WAS NOTICED THAT THE AREA OF THE QL OVER THE HEAT SINK WAS VERY WARM. THE HEAT SINK IS SUPPOSED TO COOL THE UA7805, THE 5 VOLT REGULATOR, BY THERMAL CONDUCTION. THIS IC REDUCES THE POWER SUPPLY UNREGULATED "9 VOLTS UNDER LOAD" TO A HIGHLY REGULATED 5 VOLTS. THE CURRENT DRAWN FROM THE 9 VOLT SUPPLY WITH THE 512 RAM IS NORMALLY ABOUT 0.75 AMPS, AND ABOUT 1.0 AMP WITH A MICRODRIVE OPERATING, WITH A STARTING SURGE OF ABOUT 1.1 AMP. THE 9 VOLT SUPPLY IS RATED AT 2 AMPS. THE UA7805 IS DISSIPATING ABOUT 3 WATTS, SINCE THE 9 VOLT SUPPLY ALSO FEEDS THE MICRODRIVES ETC. SEPARATELY.

I DID THE FOLLOWING:

1. USED NEW SILICON GREASE BETWEEN REGULATOR AND THE HEAT SINK, AND USING A SMALL SOLDER LUG AND A BRASS WASHER TIGHTENED THE MOUNTING SCREW TO GET GOOD HEATTRANSFER.

2. INSTALLED A TANTALUM, 10 UF, 30 VOLT CAPACITOR FROM THE INPUT SIDE OF THE UA7805, (9V) TO THE GROUND LUG INSTALLED IN 1.ABOVE. ( GROUND IS THE NEGATIVE SIDE)

3. REMOVED ALL PORT COVERS TO IMPROVE CIRCULATION.

4. BY MEANS OF A SMALL VARIABLE TRANSFORMER, REDUCED THE INCOMING LINE VOLTAGE TO ABOUT 90 VOLTS RMS. THIS LAST MEASURE REDUCED THE FREQUENCY OF "HANGUPS" BUT DID NOT ELIMINATE THEM.

5. THE USE OF A 4 INCH, AC 120 V. EXHAUST FAN AT HALF LINE VOLTAGE, RIGGED TO A HOME MADE SOCK COUPLED TO THE RAM EXTENSION PORT, SOLVED THE PROBLEM OF "HANGUPS" BUT WAS NOT VERY CONVIENT, BEING WINDY, NOISY, SPACE EATING AND CONSTANTLY FALLING APART SINCE IT WAS HELD TOGETHER WITH SCOTCH TAPE.

6. THE FINAL SOLUTION WAS THE INSTALLATION OF 3 INCH, 12 VOLT,DC, BRUSHLESS COOLING FAN THRU THE QL COVER, BLOWING DIRECTLY AT THE HEAT SINK AND POWERED FROM THE 9 VOLTS QL SUPPLY. SINCE THIS INSTALLATION WAS MADE, THERE HAVE BEEN NO HANGUPS, NO GARBAGE IN PROGRAMS, NO BREEZES,COOL, QUIET.

A PLEASURE !!

FOR DETAILS SEE PART 2.

QL COOLING PROBLEMS, PART 2 BY H.J.DIGIOVANNI, LIST.

IT WAS INDICATED IN PART 1 THAT THE QL WITH THE 512 RAM EXTENSION AND ONE MICRODRIVE OPERATING DREW ABOUT 1 AMP FROM THE 9 VOLT SUPPLY, MOSTLY TO THE UA7805 REGULATOR. THIS SUPPLY OUTPUT IS RATED AT 2 AMPS DC. THUS RADIO SHACK'S #273-243 3 INCH, BRUSHLESS DC FAN, RATED AT 12 VOLTS, RANGE 7.0-13.8 VOLTS, WITH MAX. CURRENT OF 150 MA. IS IDEAL.

AT 9 VOLTS THIS FAN DRAWS 100 MA WHICH LOADS THE 9 VOLT, 2 AMP SUPPLY TO ABOUT 1.15 AMPS MAX. (STILL CONSERVATIVE LOADING) AND REDUCES THE RATED 27 CFM AIR FLOW TO AN ESTIMATED 15 CFM. SUFFICE IT TO SAY THAT AFTER INSTALLATION AS DESCRIBED BELOW, THE TOP OF THE QL OVER THE HEAT SINK REMAINS COLD AND ALL "FREEZING", PROGRAM GLICHES, ETC. HAVE COMPLETELY DISAPPEARED. IT IS NOW A PLEASURE TO USE MY QL!

THE INSTALLATION INVOLVES THE REMOVAL OF THE TOP COVER OF THE QL BY REMOVING THE FOUR LONG SCREWS AT THE UNDER SIDE OF THE BACK EDGE AND THE REMOVAL OF THE 4 SMALL SCREWS AT THE UNDER SIDE OF FRONT EDGE OF THE QL. THE SCREWS HOLDING THE MICRODRIVES SHOULD NOT BE REMOVED.

CAREFULLY LIFT THE FRONT END OF THE COVER, HINGING THE REAR END AND CAREFULLY REMOVE KEY-BOARD RIBBON CABLES BY PULLING STRAIGHT OUT WITHOUT TWISTING OR BENDING. REMOVE THE 6 WIRE LED CONNECTOR. OR WIRES IF SO FURNISHED. THE TOP OF THE QL SHOULD NOW REMOVABLE.

REFERRING TO FIG. #1, LAYOUT, ON THE TOP COVER, THE CENTERS MARKED a,b & c. ACCURACY IS A MUST. USE A SHARP SCRIBER TO MARK THE INTERSECTIONS OF THE MEASUREMENTS, THEN CENTER-PUNCH THE EXACT CENTER. A PIECE OF 2X4 LAID UNDER THE WORKING AREA WILL HELP THE CENTER-PUNCHING. AS A CHECK, TWO DIAGONAL LINES FROM THE a CENTERS SHOULD INTERSECT AT THE b CENTER.

USING A SMALL SHARP DRILL, SUCH AS A #51 OR A 1/16 IN. , DRILL AT ALL CENTER-PUNCHES. THEN DRILL THE a HOLES WITH A #36 DRILL; THE b HOLE, WITH A DRILL TO ACCURATELY LOCATE THE CENTER OF THE FLYCUTTER USED TO CUT THE 2.5 INCH DIAMETER HOLE, USUALLY A #30 OR 1/8 DRILL; THE c HOLE, WITH A #13 OR 3/16 DRILL.

USING A FLY-CUTTR SET TO 2.5 INCH DIAM. SLOWLY START TO CUT THE LARGE HOLE. USE VERY LOW SPEED AND FEED SINCE THE HEAT OF CUTTING WILL TEND TO MELT THE PLASTIC. GO ABOUT HALF THROUGH AND THEN START FROM THE OTHER SIDE. BE CAREFUL NOT TO DISTURB ANY OF THE INTERNAL SHIELDING. CONTINUE THROUGH AND THEN FILE THE CUT TO CLEAN THE MOLTEN GOOK. A SMALL DRILL PRESS IS VERY DESIREABLE FOR THIS OPERATION.

USING A # 6-32 TAP, THREAD ALL FOUR OF THE a HOLES ONLY. BE SURE TO TAP PERPINDICULAR TO THE SURFACE OF THE QL.



REFERRING TO FIG. #2, USING 1/16 INCH THICK GASKET MATERIAL, SUCH AS "VELLUMOID", SHEET CORK OR SHEET RUBBER, CUT THE 2.5 INCH DIAMETER HOLE WITH A GASKET CUTTING KNIFE OR A GASKET CUTTER IN A DRILL PRESS. THE OTHER HOLES SHOULD PREFERABLY BE PUNCHED. THE a HOLES SHOULD BE 5/32 PUNCH OR IF DRILLED, 5/32 OR #24 DRILL. THE c HOLE SHOULD BE 3/16 PUNCH OR IF DRILLED, 3/16 OR # 13 DRILL. NOTE THE 1/16 ' SLIT AT THE c HOLE TO FACILITATE REMOVAL OF GSKET FROM FAN WIRES.

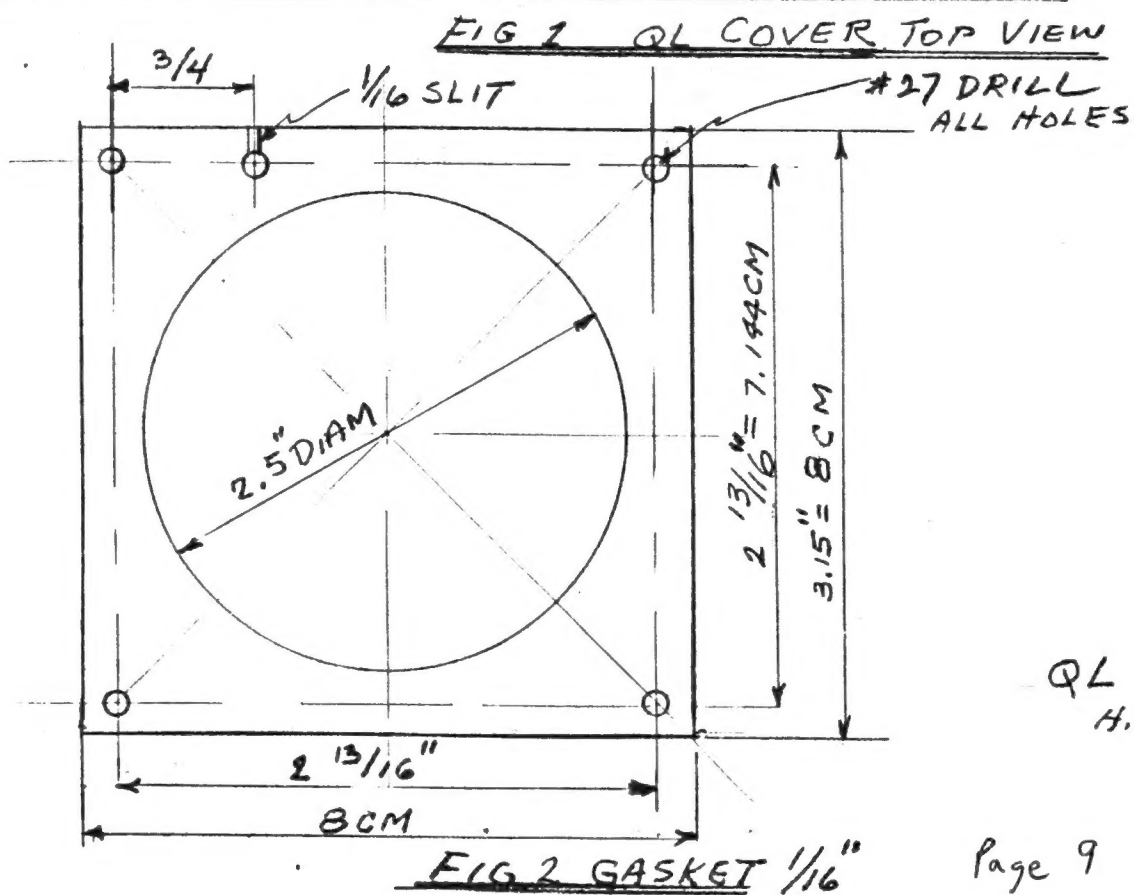
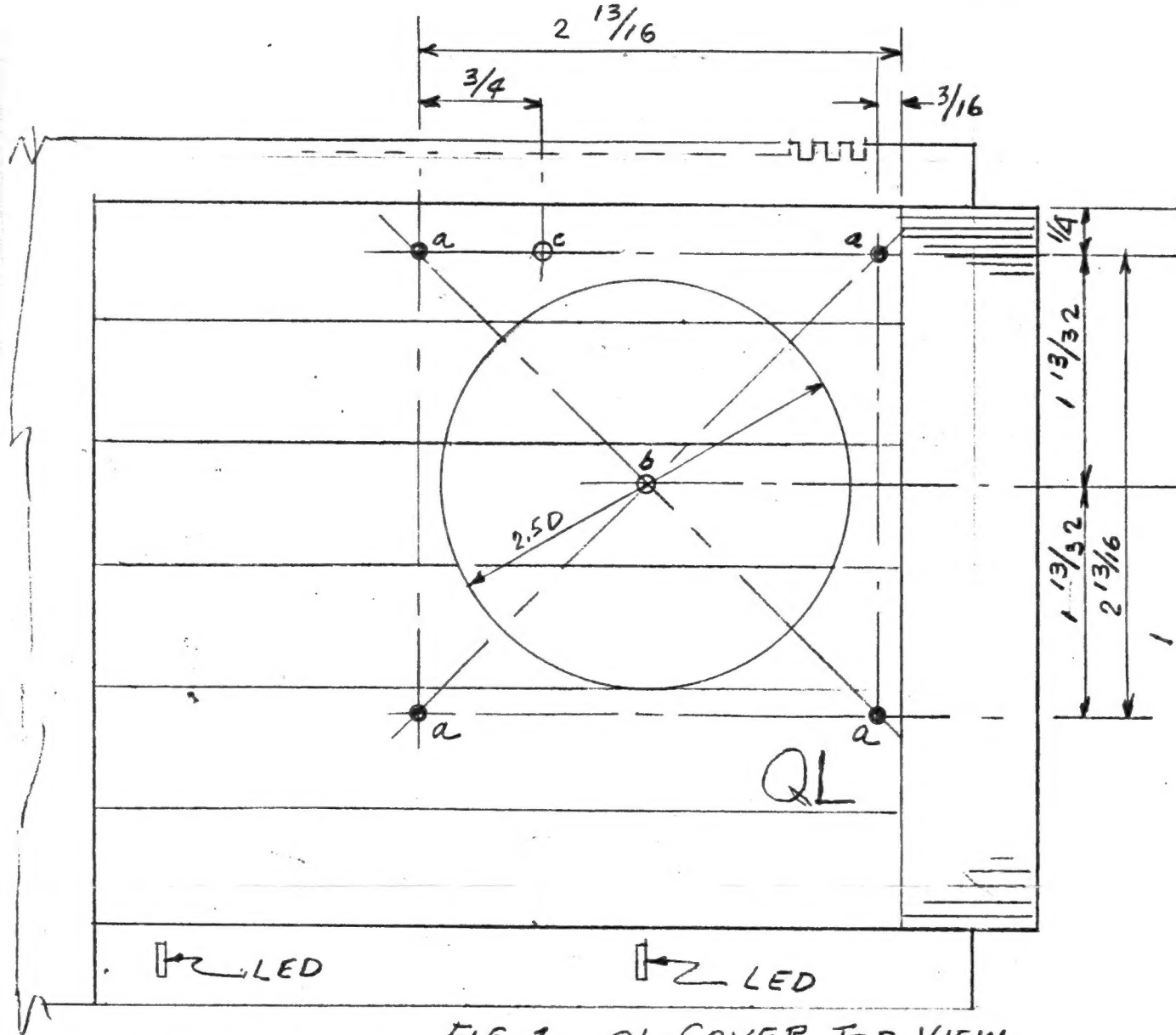
FACE THE FAN SO THAT THE ARROWS MOULDED ON THE SIDE AND THE WIRES ARE TO THE REAR OF THE QL, THE AXIAL ARROW POINTING TO THE QL. FEED THE RED AND BLACK WIRES LOOSELY THROUGH THE C HOLE. SLIP THE GASKET THROUGH THE SLIT AT ITS c HOLE, BEING SURE THAT THE a HOLES WILL MATCH THE QL AND FAN. ALIGN MORE CAREFULLY AND PULL THE FAN WIRES TO BE SURE THAT THERE WILL BE NO PINCHING. USING 6/32 BINDING HEAD 5/16 OR 3/8 INCH SCREWS, (NO LONGER SINCE THEY WILL INTERFERE WITH THE MICRODRIVES). MOUNT THE FAN BY FEEDING SCREWS TO THE BOTTOM HOLES OF THE FAN AND TURNING THE SCREW WITH A 1/8 INCH DIAM. SCREW DRIVER THRU THE TOP HOLES. FASTEN THE SCREWS LOOSELY UNTIL ALL ARE IN PLACE, THEN CHECK TO SEE THAT THE WIRES ARE IN PLACE, THEN SCREW FIRMLY BUT NOT TOO TIGHT.

FROM THE BOTTOM OF THE COVER, TWIST THE TWO FAN LEADS. SOLDER THE BLACK LEAD TO THE LUG ADDED WHEN MOUNTING THE HEAT SINK FOR THE UA7805 (GROUND), AND SOLDER THE RED LEAD TO THE POSITIVE LEAD OF THE CAPACITOR ADDED TO THE UA7805 (+9 VOLTS). CAREFULLY REPLACE THE KEYBOARD RIBBON CONNECTORS AND THE LED CONNECTOR OR WIRES. DRAPE THE FAN WIRES IN A LOOP WHERE THERE WILL BE NO PHYSICAL INTERFERENCE AND CLOSE THE COVER REPLACING THE SCREWS WHERE REMOVED.

THE INSTALLATION IS COMPLETE EXCEPT THAT PROTECTION SHOULD BE PROVIDED FOR THE EXPOSED MOVING FAN BLADE. AN OPEN SPACE MUST BE PROVIDED FOR THE AIR TO ENTER THE FAN. THIS CAN BE DONE BY SUPPORTING A THIN BUT RIGID 8 CM. X 8 CM PLATE, SOLID OR PERFORATED, BY MEANS OF 1/2 LONG SPACERS THROUGH THE TOP MOUNTING HOLES IN THE FAN. DRILL FOUR #27 HOLES ON THE PLATE WITH THE SAME DIMENSIONAL SPACING AS THE a HOLES INDICATED ABOVE AND USE 1/4 O.D. X 3/16 I.D. 1/2 LONG SPACERS WITH 6/32 X 1 INCH LONG SCREWS AND SMALL PATTERN 6/32 NUTS. A NOMINAL 1/16 THICK PLY WOOD WORKS FINE.

I HAVE JUST NOTICED THAT W.W.GRAINGER CATALOGS A COMMERCIAL GUARD THAT SHOULD NOT REQUIRE SPACERS TO DO THE JOB. THIS IS THE ITEM "NO.4C740, "GUARD FOR 3 1/8 FANS".

P.S. I BOUGHT ONE AND CAN HIGHLY RECOMMEND IT, BUT UNLESS YOU ARE IN THE TRADE, YOU HAVE TO BUY THROUGH A RETAILER. CALL GRAINGER FOR DETAILS. RETAIL PRICE, LESS THAN \$1.50.



# \*\*\*\*\* \* GRAPHICS FOR ZEBRA'S DESIGNER SERIES \* \*\*\*\*\*

BY CEDRIC R. BASTIAANS

Some time ago I purchased Zebra's Graphics Designer Series, 3 software programs that allow you to design your own signs, banners and greeting cards.

I am in general quite happy with this software and have only one disappointment, the GRAPHICS provided in the software's library. There are 22 of them, as depicted below. The gallery shows two more, not numbered and boxed. These are the subject of this article and were not part of the original library.

Look over the original 22 and see if you agree with my evaluation of their merits. First of all I judged them on "how well they please the (my) eye", then also on usefulness.

Here are my judgements:

#2, 4, 5, 8, 10, 11, 16, and 21 are pretty and useful.

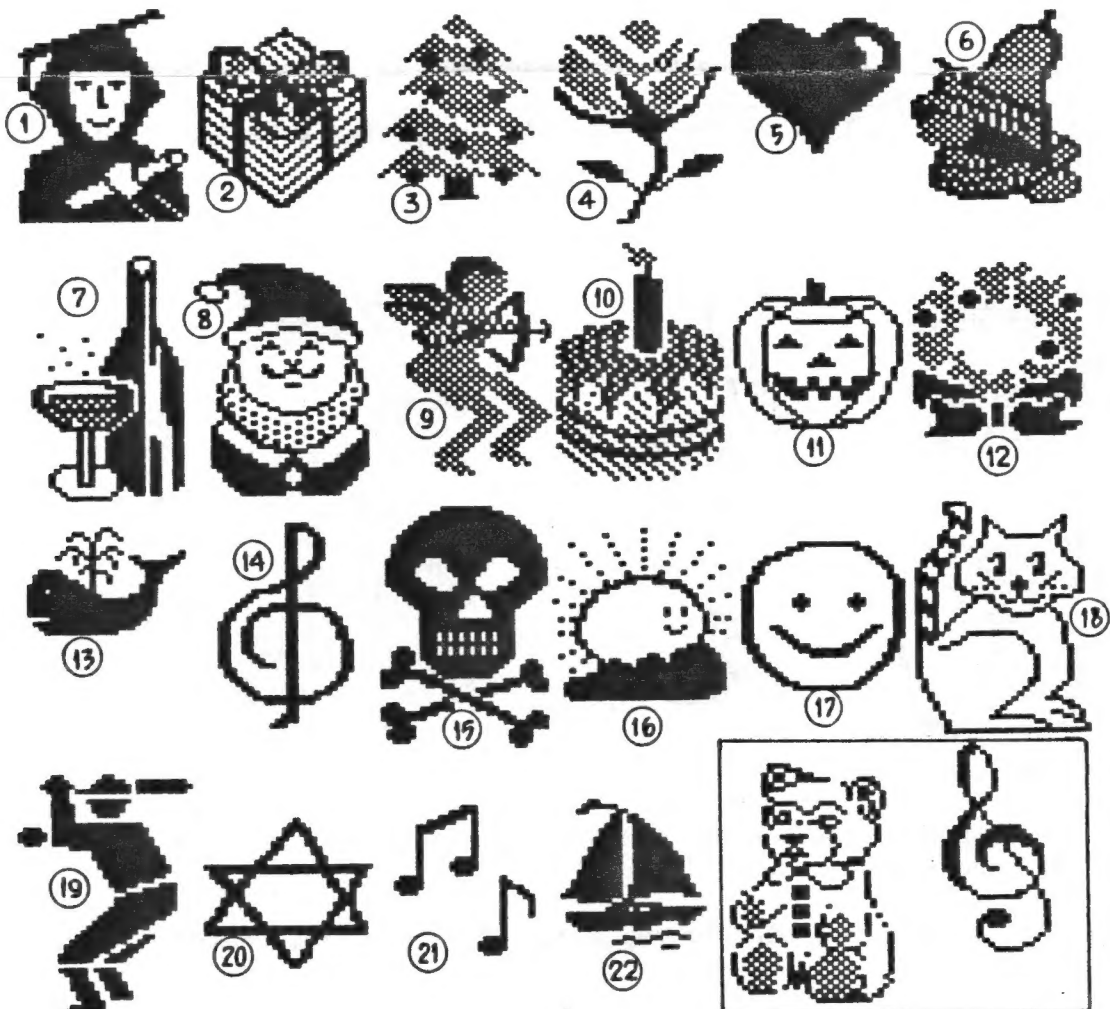
#3, 7, and 22 are just "okay" but still usable.

Some need to be "worked on": #6 (it is too "busy"), and 12 (to me, it looks more like an "extraterrestrial being" than a "wreath!"), and 17.

#1, 9, 14, 15, 18, 19, and 20 are downright UGLY and are therefore not acceptable.

Finally, I am puzzled by #13, the whale. What would you use this for??? In a birthday card for your 300-pound niece?

Fortunately, the software came with a built-in GRAPHICS DESIGNER UTILITY which gives you a tool to make your own graphics library and replace all the original ugly ones.



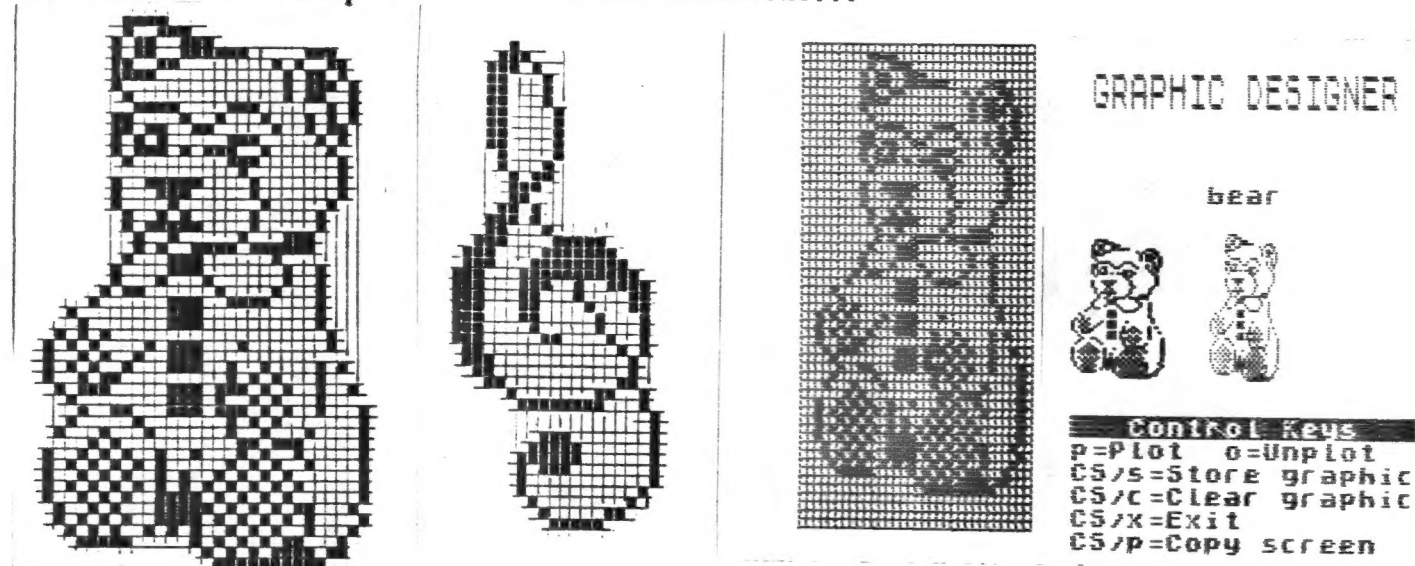
When you LOAD this utility, you will be presented with a menu and you should enter 1 (ONE). The screen will then show a pixel raster which will be your "design window". It'll already show the ROSE design. On its right will be an actual size image of the rose. The pixel raster is 3 times larger. A blinking cursor can be seen in its upper left corner.

First a few remarks; I'm afraid they are going to be criticisms. (Who was that mumbling, "What else is new?"). Well, you know me, I often claim to know better... Anyway, my first remark is that the pixel raster has an ASPECT RATIO of 56/32, or 1.75. This is a very awkward ratio of height to width and will as a consequence RESTRICT the kinds of designs we can enter. A more useful aspect ratio would be LESS THAN ONE, like 0.7 (photographs) or 0.75 (TV screens). This derives from the way our two eyes are placed: AS A PAIR, SIDE BY SIDE. Our panoramic vision spans a rectangle that's wider than it's high! Then I found that the navigation of the cursor by means of the cursor keys 5, 6, 7, and 8 to be somewhat touchy as is the horizontal moving of the cursor with the p(plot)-key and the o(unplot)-key. What I DO like is that plotting and unplotting make distinctly DIFFERENT SOUNDS (clicks?). I just would wish they could be LOUDER (who knows how to do this?)

To create a new graphics design, CLEAR the raster by punching in "CAPSHIFT c". I'm showing below two designs, one of a teddybear, the other of a clef. Always maneuver the cursor from left to right (using the plot/unplot keys) and from top to bottom, using the cursor keys to bring it down and back to the left. Once you have moved the cursor to the point where you want to start the pixeling, you can choose to go "blindly", just using the click sounds to follow the pixel sequencing. It's easier than it looks, believe me.

While you are making your (or my) creation, you can follow the progress on the real size image that forms to the right. This allows you to change any pixeling that might lead to a better depiction of what you're after.

When done, SAVE the design and name it. I chose BEAR for the teddy and CLEF for the other design, NOT CLEFT, because that's what Kirk Douglas has on his chin! A clef is a symbol on a musical staff, denoting (pun intended!) the pitch of the notes. ERASE CLEFT, unless you want to keep it. Of course, I DO realize that beauty is in the eye of the beholder and you may not like my designs at all and prefer Zebra's. After all, someone at Zebra must have been proud of his or her creations...



Before SAVEing the design, you may want to make a copy on your TS2040, but be aware of the fact that it will not show how your BIG PRINTER will print it. In the BEAR print above, I have added the print of my SG10 printer on the left of the TS2040's depiction, which is right underneath the word "bear".

If you like my designs and want to see more, write the LIST editor.

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